

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
31 December 2003 (31.12.2003)

PCT

(10) International Publication Number  
WO 2004/000491 A2

(51) International Patent Classification<sup>7</sup>: B22F 9/16, 1/00 (74) Agent: REINHOLD COHN AND PARTNERS; P.O. box 4060, 61040 Tel Aviv (IL).

(21) International Application Number: PCT/IL2003/000522 (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 19 June 2003 (19.06.2003) (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language: English (26) Publication Language: English

(30) Priority Data: 150325 19 June 2002 (19.06.2002) IL

(71) Applicant (for all designated States except US): NANO POWDERS INDUSTRIES (ISRAEL) LTD. [IL/IL]; 7 Bareket Street, Industrial Park, 38900 Caesurae (IL).

(72) Inventors; and (75) Inventors/Applicants (for US only): GARBAR, Arkady [IL/IL]; Haalonim Street 8/9, 20692 Yoqneam Illit (IL). DE LA VEGA, Fernando [IL/IL]; 7 Bialik St., 30900 Zichron Yacov (IL). MATZNER, Einat [IL/IL]; Brosh 402, 17940 Adi (IL).

## Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2004/000491 A2

(54) Title: A METHOD FOR THE PRODUCTION OF HIGHLY PURE METALLIC NANO-POWDERS AND NANO-POWDERS PRODUCED THEREBY

(57) Abstract: The present invention discloses a novel method for the production of metallic nano-powder. This cost-effective, simple process is customized for a full-scale production of metallic nano-powders containing a first metal, and comprising the following of forming an alloy comprising said first metal and at least one soluble metal; applying first thermal treatment in the manner homogenized alloy is obtained; applying a cold work to the homogenized alloy so thin strips are obtained; applying a second thermal treatment to the alloy until a phase composition of predetermined characteristics is obtained; subjecting the said alloy to a leaching agent adapted to effectively leach out the least one soluble metal; filtering and washing the powder; washing the powder; drying the powder; coating the powder with chemicals; and then de-agglomerating the coated powder. The present invention also discloses a cost-effective and highly pure metallic powder produced by the method defined above.